

WHAT IS CLAIMED IS:

1. A composition based on cerium oxide and on zirconium oxide in a Ce/Zr atomic proportion of at least 1, characterized in that it exhibits a level of reducibility of at least 70% and a specific surface of at least 15 m²/g.

2. The composition as claimed in claim 1, characterized in that it exhibits a level of reducibility of at least 75%.

3. The composition as claimed in claim 1 or 2, characterized in that it exhibits a specific surface of at least 20 m²/g.

4. The composition as claimed in one of the preceding claims, characterized in that it exhibits a Ce/Zr atomic proportion of at most 1.4.

5. The composition as claimed in one of the preceding claims, characterized in that it additionally comprises at least one other element chosen from lanthanides other than cerium.

6. The composition as claimed in one of the preceding claims, characterized in that it additionally comprises at least one precious metal chosen in particular from platinum, rhodium, palladium, iridium, silver or gold.

7. A process for the preparation of a composition as claimed in one of the preceding claims, characterized in that it comprises the following stages:

- (a) a mixture comprising compounds of cerium, of zirconium and optionally of an abovementioned element is formed;
- (b) said mixture is brought into contact with a basic compound, whereby a precipitate is obtained;
- (c) said precipitate is heated in an aqueous medium;

then

- (d) either an additive, chosen from anionic surfactants, nonionic surfactants, polyethylene glycols, carboxylic acids and their salts and surfactants of the type ethoxylates of fatty alcohols which are carboxymethylated, is first added to the medium resulting from the preceding stage and, optionally, said precipitate is subsequently separated;
- (d') or said precipitate is first separated and said additive is subsequently added to the precipitate;
- (e) the precipitate obtained in the preceding stage is milled;
- (f) the precipitate thus obtained is calcined under an inert gas or under vacuum, in a first step, at a temperature of at least 850°C, and then under an oxidizing atmosphere, in a second step, at a temperature of at least 400°C.

8. A process for the preparation of a composition as claimed in one of the preceding claims, characterized in that it comprises the following stages:

- (a) a mixture comprising compounds of cerium, of zirconium and optionally of an abovementioned element is formed;
- (b) the mixture is heated, whereby a precipitate is obtained;
- (c) either an additive, chosen from anionic surfactants, nonionic surfactants, polyethylene glycols, carboxylic acids and their salts and surfactants of the type ethoxylates of fatty alcohols which are carboxymethylated, is first added to the medium resulting from the preceding stage and, optionally, said precipitate is subsequently separated;
- (c') or said precipitate is first separated and said additive is subsequently added to the precipitate;
- (d) the precipitate obtained in the preceding stage is milled;
- (e) the precipitate thus obtained is calcined under an inert gas or under vacuum, in a first step, at a

temperature of at least 850°C, and then under an oxidizing atmosphere, in a second step, at a temperature of at least 400°C.

- 5 9. The process as claimed in claim 7 or 8, characterized in that use is made, as compounds of zirconium, of cerium and of the abovementioned element, of a compound chosen from nitrates, sulfates, acetates, chlorides or ceric ammonium nitrates.
- 10 10. The process as claimed in one of claims 7 to 9, characterized in that the heating of the precipitate from stage (c) or of the mixture from stage (b) is carried out at a temperature of at least 100°C.
- 15 11. The process as claimed in one of claims 7 to 10, characterized in that a wet milling is carried out.
- 20 12. The process as claimed in one of claims 7 to 11, characterized in that the milling is carried out by subjecting a suspension of the precipitate to shearing.
- 25 13. The process as claimed in one of claims 7 to 12, characterized in that a precious metal is added to the precipitate resulting from stage (d) or (d') or from stage (c) or (c').
- 30 14. A catalytic system, characterized in that it comprises a composition as claimed in one of claims 1 to 6.
- 35 15. A process for the treatment of exhaust gases from internal combustion engines, characterized in that use is made, as catalyst, of a catalytic system as claimed in claim 14 or of a composition as claimed in one of claims 1 to 6.